ornamental and beautiful, or they are used for purposes of instruction. We need agricultural gardens in which agricultural plants are dominant rather than recessive.

There is another difficulty quite as detrimental to progress as inability to obtain material. It is the lack of trustworthy information in regard to economic plants. Quite as necessary as agricultural gardens is an agricultural botany. In this botany must be set forth, besides descriptions of species, the habitat, the migrations, the geographical relations to other plants, the changes that have occurred, how the plant is affected by man-given environment, and all similar data. Physiological facts regarding germination, leafing, flowering and fruiting must be given. The production of such a book is a consummation devoutly to be wished. At present the information needed is best supplied by Bailey's splendid cyclopedias, but there is need of more historical and biological knowledge in agricultural botany.

I had thought to say a few words about the men who are to do this work. Material and books do not create. The man has not been lost sight of, but I should have to set forth his temper and training too hurriedly even if I could properly conceive them. But from the beginning to the end of this new shaping of food crops, the individual man trained for the work will be dominant. The work to be done, however, is so vast that we can not make an appreciable showing unless the task be divided among a great number of workers. Those who will do most are such as can concentrate on particular problems the sifted experience and knowledge of the world. Many may sow, but only the strong can garner.

There should be unity of action to avoid waste. What more pathetic spectacle than that of isolated men in our agricultural institutions attacking one and the same problem in which they duplicate errors and waste their efforts in what too often proves with all to be petty circle-squaring. Much of this appalling waste can be avoided by a proper spirit of cooperation. By all means let us cooperate in the amelioration of plants.

In conclusion, I must end as I began by calling attention to the great probability of a near-at-hand deficiency of food. I must again urge the importance of making use of every means of increasing the supply. I have tried to call attention to the desirability of growing a greater number of food-plants as one of the means. Not to attempt to develop and utilize to its highest efficiency the vast wealth of material in the plant-kingdom for the world's food is improvidence and is a reckless ignoring on your part and mine of splendid opportunities to serve our fellow men. It is my hope that the horticultural departments of the agricultural colleges and experiment stations of North America, represented by members of this society, may become active agents in increasing the number of food crops and thereby the world's food supply.

U. P. Hedrick

HEADSHIP AND ORGANIZATION OF CLINICAL DEPARTMENTS OF FIRST-CLASS MEDICAL SCHOOLS[1]

Two recent official manifestations with reference to the problem of full-time clinical positions deserve to be put at the head of our

[1] This manuscript has been prepared for the president and trustees of a university in answer to the following questions:

"First: What should be the relation of the hospital to a first-class medical school? The question is asked . . . to bring out the ideal relationship. For instance, to what extent should the school own, control, or manage its teaching hospital in its medical and in its administrative functions.

discussion, because they come from the most important educational bodies in medical matters in this country and because they throw light upon the acuteness and the present status of our problem. (1) The Johns Hopkins University has recently appointed full-time professors of medicine, surgery and pediatrics. There under the term "full-time professorship" two obligations are included. In the first place the head of a clinical department must give as much of his time to his department as other full-time university professors give of their time, for instance, as the professors of physiology and pathology give to their departments. In the second place, the head of a clinical department can not give any of his spare time to any clinical venture which may bring him material gain. It is interesting and instructive to find that this plan was advocated twelve years ago by Dr. L. F. Barker, while he was professor of anatomy at the University of Chicago. Here is what he said then:[2]

> They (the full-time professors of clinical subjects) should be well paid by the universities. They should not engage in private practise even if the university has to pay them double the ordinary salary now paid a university professor to retain them wholly in university work. If any patients at all outside the hospital were seen in consultation, and there is some force in the argument that the well-to-do public should, at least in some rare and difficult cases, be permitted to profit by the opinion and advice of the university professor, the fees received from them may be contributed to the budgets of the hospital themselves, in order to remove all temptation from the staff.

2. The second manifestation is contained in the official Report of the Council of Medical Education made at the last meeting of the American Medical Association.[3] This report speaks of the Johns Hopkins plan, according to which the full-time professors "may do private practise, but that fees from that practise are to be turned into the university treasury and not into their own pockets," as *grotesque*. The report lays stress upon the fact that this plan was proposed by non-medical men (that is, the General Education Board) who "do not have the medical point of view and do not understand the complex functions demanded of the clinical teacher." It may be said here in parenthesis that the term "non-medical men" is in this case not entirely correct, as the plan was surely suggested, advocated and accepted by important members of the Medical School, for instance the professors of pathology, physiology, anatomy, etc. However, this designation remains true to the extent that some of the medical men who advocated these radical changes in the department of medicine have practical knowledge only in the sciences closely associated with medicine, but not in the domains of clinical medicine itself. The report, however, acknowledges the fact that at present the placing of the clinical departments in the medical school on a satisfactory basis is one of the most pressing needs.

> With this in view the council of Medical Education has appointed a strong committee of ten clinicians, who have had great experience in teaching and who are regarded as authorities in their special department and in medical education, to study this subject and to report to the next conference on medical education. . . . The medical school very properly demands that their clinical teachers be men who are recognized as authorities in their special fields both by the profession and by the community . . . whatever plan is adopted must make it possible for the clinical teachers to remain the great authorities in their special fields both in the eyes of the profession and in the eyes of the public.

The report of the council does not state directly that the present status of teaching in the clinical departments in the medical schools of this country is very unsatisfactory. It admits it, however, tentatively, when it states that the placing of this teaching on a very satisfactory basis is one of the most pressing needs. We have seen that the Johns

"Second: How important do you believe full-time positions in the clinical subjects are for a satisfactory connection between the school and hospital?"

[2] *Amer. Medicine*, 1902, Vol. 4, p. 146.

[3] *The Journal of the American Medical Association*, LXIII., 1914, 86.

Hopkins University already began to experiment with a cure for this unsatisfactory condition. The Council of the Medical Education finds this cure grotesque and defers its own therapeutic plans until the committee of ten clinicians has rendered its report on this problem. Now, we never ought to offer any treatment before we know exactly the nature of the ailment. What ails the instruction and instructors in clinical subjects in the medical schools in this country? I do not find that this phase of our problem, perhaps its most essential part, has been anywhere analyzed. I shall therefore attempt to do it here.

The report of the Council on Medical Education lays great stress upon the requirements that the clinical teachers must be "great authorities in their special fields both in the eyes of the profession and in the eyes of the public." If that would be really the main criterion of fitness, I would then say that professors of medicine of to-day fulfill, at least in most instances, their mission: they are great authorities in the eyes of the public and the profession; their offices are full and they are consulted by physicians and the sick from near and far. But are these authorities well-fitted to be heads of clinical departments? According to my way of thinking, I would say that in most instances they are unfit for these positions. Now let me give my reasons for this statement, which may sound a little too severe.

I wish to introduce my argument by the following two propositions, the correctness of which ought to be apparent to every one. (1) The proper preparation of practitioners of medicine is a very serious task; it is of great importance to the public as well as to the student of medicine himself, and ought, therefore, to be carried out as a *primary occupation* and in an earnest and conscientious manner. (2) No matter whether we take a progressive or a conservative stand in medicine, one and all must agree that the *student of medicine of to-day must be taught the medical knowledge as it is known to-day.* For this purpose let us look at the activities of any head of a clinical department, let us say, of internal medicine, who is, as the council demands, "a recognized authority in his field in the eyes of the profession and of the public"; let us see whether these activities comply with the above-mentioned self-evident requirements. Let us first scrutinize the history of one day of one of our noted professors of medicine. He has consultation hours every morning until noon; the waiting room is crowded (he is the "best diagnostician" in his town) and sometimes he has to remain in his office an hour or two longer. As a rule he has to accept a few bedside consultations with practitioners, which again takes up many hours of his time in the afternoon. He may even have to go out of town for consultations. At any rate, including the time given to his meals, etc., about ten hours of his day are easily accounted for by this activity. Then on account of his high social standing in the community, etc., functions have to be attended, for which his wife makes the engagements; dinners have to be attended and to be given; meetings of advisory boards and of all sorts of committees have to be attended. Then there are letters to be written or dictated, bills and other business matters to be looked after. No doubt that by these diverse obligations at least about three more hours of the day are consumed. We have thus far accounted for about thirteen hours every day of the professor's time. Now how much of his time is then left for teaching medicine to students and attending to the sick at the hospital? If I say three hours, I am sure it is exaggerated in most cases. But whether two or three hours, they are hours left over from a very busy active occupation, and the teaching is then done in most cases by a worn-out man bodily and mentally. It will be generally admitted that for nearly all teachers of clinical subjects private practise, with its commercial end, is the chief aim and occupation, while the teaching part is at best only a minor subject, and in not a few instances only an ornament and unmistakably a very desirable advertisement. I remember how years ago a noted surgeon, who was the professor of surgery at one of the best-known

medical schools, said to me: "They pay me a thousand dollars a year. The fools! I would pay them $5,000 for the professorship; it's worth more than $25,000 a year to me." What a deplorable condition! The teaching of the pure medical branches which, for the physician in the making, is the most important part of his medical education, should be carried on by worn-out men for whom it is invariably only a secondary occupation and often not much more than an ornament or an advertisement!

Now let us come to the second proposition. We have seen that the professor of medicine, who is considered an authority by the profession and the public, is so busy that very little time is left to him to carry on properly his duties as a teacher. Is there any time left him to study properly the advances which are continually made in medicine? Let us study the medical career of the best medical consultant and professor. He graduated in medicine at the head of his class, he served as an interne at a good hospital, he went abroad, where he learned the then newest things in medicine. After his return he soon became assistant to a leading consultant and a professor. For several years he made for his chief laboratory examinations with the older and newer methods of diagnosis, saw some of the chief's private patients, and was soon appointed adjunct at the hospital and instructor in the department of medicine of which his chief was the head. He saw some of the autopsies and compared them with the diagnoses; found time to read some of the newer medical literature, made himself several contributions to it; assisted his chief in preparing and giving the lectures and helped him in preparing a paper or two which had to be flavored with some of the newer things in medicine. Gradually he picked up a private practise of his own, which suddenly commenced to grow rapidly. He had to leave his chief, consultations began to come in, and in a short time he advanced to the position of attending physician in several hospitals, and perhaps also to the position of a clinical professor in his school. His reputation and his private practise grew, and with it grew his extensive personal experience; he was becoming indeed an excellent physician. But in exact proportion to this growth his spare time grew less and less, and with it grew fainter and fainter the first-hand acquisition of knowledge of the advances of medicine, which are going on in rapid strides all over the world. There was no longer any idea of doing some original work or of a patient study of communications on entirely new subjects which continually spring up in rapid succession. There was no real reading any more; perusing of some articles, glancing at abstracts, picking up one thing or another at meetings and discussions, had to take the place of study. Our authority is not an old fogy who does not believe in the truth of things which he does not know. On the contrary, he is a progressive man and knows how to get at the new things. With a growing income and with the cheapness of scientific labor, he learned early to surround himself with several young assistants, specializing in various directions. The morphology and the chemistry of the urine; the various morphological blood pictures, and the chemistry of the blood; the bacteriology of diverse diseases and the various immunity reactions; metabolic studies, phlebograms and cardio-electrograms, etc., our authority gets a report on all of them and is told of their possible significance by his various young assistants. Of course, his knowledge of these things as he picks them up is extremely superficial; they can be thoroughly grasped only by hard study. But our authority has to use, and uses, this superficial knowledge of new things in consultations at the bedside, in the lecture room and in papers and discussions at medical meetings.

To state it briefly: the store of more solid knowledge of the best clinical teacher, as we know him to-day, consists of that which he had acquired during his undergraduate and post-graduate studies and of the accumulated personal knowledge gained by long empirical observations at the bedside. Of the marvelous advances which are continually made in all

branches of medicine all over the world our clinical teacher has at best only a very superficial knowledge and ought not to be the man to teach them to the physician of the future.

The foregoing analysis shows, I believe, conclusively, (1) that the teaching of medicine to the future physicians is for nearly all the heads of clinical departments only a secondary occupation and in some instances it is not more than an ornament or a legitimate business advertisement; and (2) that most of the present heads of departments do not possess sufficient familiarity with the modern medicine to be the instructors of present-day medicine to the coming physician.

The source of this anomalous situation is to be found in the fact that heads of departments of medicine are chosen from the class of physicians who are primarily busy practitioners and consultants. They may be noted men in their line and perhaps are indeed all that the Council on Medical Education is laying stress upon, namely, "great authorities in their special fields both in the eyes of the profession and in the eyes of the public." But on account of that very virtue they are in such demand in their private practise that for years they could find no time to follow up seriously the rapid advances in medicine. For the same reason they are compelled to treat their vocation as educators in the science and practise of medicine only as a secondary occupation—which alone is bound to bring unsatisfactory results, even if our professors were well fitted to teach the medicine of to-day.

There is no doubt, then, that the present mode of instruction of clinical subjects is very unsatisfactory. Let us now examine the methods by means of which the anomalous situation could be mended best. I wish to present at first my own suggestion very briefly. I have pointed out before that the source of the evil is to be found in the fact that at present the heads of the departments are chosen from a class of very busy practitioners, for whom teaching is invariably only a secondary occupation. That fact points to the following plan as the most efficient remedy for our evil. Heads of departments should be chosen from a class of physicians who from the time of their medical graduation never ceased to be close students of their science, and for whom the study of and instruction in a chosen clinical subject constitutes their primary occupation. To the question, where can we get this class of physicians? my answer is: create it, or, more correctly expressed, accelerate its development, since a fairly good beginning has been made in the last few years. I shall return later to this suggestion and discuss it in detail.

In considering plans for correction, we ought to bear in mind that we are confronted not with one evil alone, but with two, namely, that (1) the present instructor in clinical subjects can not and does not give his best time to his calling as a teacher, and that (2) he has been for many years out of close touch with the advances in the medical sciences and is therefore unfit to teach them efficiently. Looking at our problem from this point of view, it is evident that the creation of "full-time" clinical professors will not cure the second evil. Suppose a large number of noted consultants, who are at present the professors of medicine in the various schools, resolve henceforth to make teaching their primary or even their exclusive occupation—will this resolution convert them at once into desirable educators, fit to teach efficiently modern medicine? There may be many things which they will have to learn from the beginning, just as much as their students, and at an age when learning is no longer an easy task.

The Johns Hopkins plan remedies both evils. That school was fortunate to be able to appoint as heads of the three chief departments of clinical medicine, men who always were close students of their branches of medicine, and who are willing to devote all their time to the teaching and the study of their subjects. As to the question, whether it is best that such teachers should have no private practise at all, opinions may differ, especially when this should be considered as a part of a general plan applicable to all medical colleges. As far as I know such a requirement

does not exist anywhere, even in Europe. But, as far as I know, the Johns Hopkins Medical School does not offer its new procedure as a general plan to be used in all other colleges. The Hopkins school follows lines of its own, and with great success. When that school was opened, about twenty-one years ago, the entrance requirements were made very high, indeed higher than at any place in the world, and at a time when most of the colleges in this country had very low requirements. The wisdom of that venture is to-day self-evident. Johns Hopkins Medical School is sending out a high type of medical men into teaching departments, into research institutes and into general practise. The part of the plan which does not permit the professor of clinical subjects to practise for private gain does not deserve to be designated as "grotesque," as has been done in the report of the Council on Medical Education. It probably originated in the desire to put the teachers of clinical subjects on a university basis, and thus maintain a university atmosphere in the medical school, an atmosphere which is essential to the mode of life of the scientific men of that school, and which is readily disturbed by the mode of life of a head of a department "who in a very limited amount of time devoted to practise could obtain for his service much more than the amount of such a salary."

However, it seems to me that this part may be well omitted from a plan which is devised to fit all or most good medical schools. The evils would be satisfactorily mended when study and teaching were the primary occupations of the head of a department. What he does with his spare time should not be our concern. We could not object, if he used it for some hobby; we should be rather glad, if he utilized it for practising medicine.

The Council on Medical Education says in its report that the Johns Hopkins plan "has not been well received by the clinical teachers and finds its supporters almost entirely among the laboratory men." The council has, as stated above, not yet made any definite suggestions; but it is very emphatic on the one point, namely, "whatever plan is adopted must make it possible for the clinical teachers to remain the great authorities in their special field both in the eyes of the profession and of the public." I wish to say here with emphasis that I have a profound admiration for the great work which the council has done in the short time of its existence. The results which it has achieved in the elevation of medical education of the United States are manifold: the general demand for higher entrance requirements; the weeding out of unfit medical schools; reducing in general the number of medical schools and the number of unfit practitioners in the United States; encouraging full-time professors for the purely scientific branches; demanding bedside instruction in clinical subjects and the creation of laboratories and the demand for laboratory work in clinical departments. The personal composition of the council has been usually good—authoritative indeed, as far as the above-mentioned premedical and medical education is concerned. But will the council as well as the committee which it has appointed remain authoritative and unbiased in their judgment also on the subject with which we deal here? We have seen that the two great evils of the present system consist in the facts that for our present heads of clinical departments instruction is only a secondary occupation and that on account of the extensive work which their primary occupation demands they are unable to follow efficiently the continuous progress of medicine. I have no doubt that the ten clinicians which make up the strong committee are "great authorities in their special fields both in the eyes of the profession and the public," that is, they are great practitioners and consultants. But for this very reason they are just the men who are not fit to be heads of departments in medicine. Will the members of this committee and the members of the Council on Education be unbiased enough to recognize the fact that being a celebrated consultant and being an efficient teacher of modern medicine are separate capacities which frequently exclude one another? The frequent repetition in the report of the council of the requirement

that the men to be chosen must be great authorities in the eyes of the public and the profession is, to say the least, disconcerting. To be a great authority in the eyes of the public is surely no evidence even of being an efficient consultant. Any one who is frequently mentioned in newspapers as having been called in consultation to treat this or that rich or noted man, or who has charged enormous fees, etc., stands as a great authority in the public eye and, I am afraid, not infrequently also in the eyes of the profession—in its present state of medical education.

I come now to a more detailed statement of my own suggestions. I shall say at the start that whatever the ideal plan may be, it should not be attained by revolutionary steps; *accelerated evolution gives better and safer results than revolution.* The changes should not be introduced abruptly; they should be gradually developed and adapted to the particular condition of each individual medical college. But these changes should in all cases be in the direction of one and the same ideal plan which could finally serve as a standard for all medical schools. Now as to this plan. I have given above a brief outline of it. But it dealt only with the head of a medical department. I wish now to consider the composition of the entire department. Generally it ought to be made up of the following four groups: (1) A head for whom this position should be his main occupation; (2) two, three or more paid scientific assistants for whom this position should also be their chief occupation; (3) several professors and associate professors, etc., for whom these positions will be secondary occupations, their chief occupation being their private consultation or family practise; some of these may receive moderate salaries; (4) an unlimited number of unpaid volunteer assistants. I should say here that all these positions should be appointments, limited variously to varying periods of years.

The head should give about eight hours a day to this, his main calling, and they should be his fresh hours, say, from 8 A.M. to 4 P.M. After these hours he may do with his time as he pleases. He may accept private consultations at his office or at the bedside and keep the fees. *But he should have no private patients at the hospital in the department of which he is the head.* If this hospital has paying patients, all the income from these patients goes to the budget of the hospital. He should not accept consultations for the first eight hours of the day, and he should make it his business to avoid spectacular consultations. He should do his best to be appreciated by the best of his profession, but to do also his best to avoid standing continuously in the public eye. *He should help to make medicine a science and its teaching a serious business, and by his behavior he should assist in the efforts to deprive the practise of medicine of its commercial aspect.* For a head of a department the first two reappointments should be for five years only; a further reappointment, if it takes place, should be until age limit. This will serve as an efficient corrective against misuse of position or mistaken election. The salary of a head of a clinical department should at least equal the highest given at that university.

The election to headship must be based upon evidence that for the past years the appointee has been continuously a close student of modern medicine and showed efficiency in teaching, as well as in research, in the scientific and practical fields of medicine. The work of the department should be conducted with the aid of all three classes or groups, but especially with the aid of the scientific assistants.

These shall be elected from graduates who have given evidence of possessing higher abilities and ambitions, and who had one year service in a good hospital and one year laboratory work in the science of medicine. They shall be appointed for three years with salaries varying from $1,000 to $2,500. During the first period their entire time should belong to the department; when reappointed, however, for a second period, they should be required to give only about eight hours a day to the department and use the balance of their time for the acquisition of some kind of a pri-

vate practise. The senior assistant should serve as adjunct to the head. It should be the duties of these assistants, besides conducting the routine work of the department with all its ramifications, to take up successively, every six months of these three years, special parts of medicine for a special study, so that at the end of the three years they would have acquired an intimate knowledge of the entire field of their department. They should also acquire successfully a fair knowledge and technique of all or most of the sciences allied to medicine. They should follow closely the new steps made in medicine and the allied sciences and test the reliability and practical applicability of new statements. I shall not enter into further particulars of their duties, which in the main should be guided by the head of the department.[4]

[4] The problem of research which ought to occupy the clinical departments, and the methods of teaching which they ought to follow are too extensive subjects to discuss them here. I wish, nevertheless, to append here the following brief remarks:

1. Recent writers were emphatic in their statements that diagnosis and therapeutics are the exclusive fields for clinical research. When a clinician begins to study pathological and physiological problems it is time for him, they say, to leave clinical medicine and become a pathologist or a physiologist. This is a fundamental error and an unfortunate misconception of the scope of medicine. Diseases are experiments made by nature which great clinicians ought to try to interpret not merely by pressing them into facts, views or classifications found or put up by others, but also by original, broad views and illuminating conceptions of their own, if they are the brainy scientifically well-trained men which they ought to be. Medicine had to wait long for the appearance of clinicians like Graves, Addison, Gull and Kocher and Minkowsky to bring to light new forms of diseases and to shed light upon the normal function of apparently obscure organs. If clinical medicine will attract real brainy men who had a thorough training in the methods of investigations in the adjoining exact sciences and who would choose medicine as their field of investigation, a flood of light would be thrown in rapid order upon the nature and the course of the functional processes in disease and in health. 2. Even in this, more scientific part of the department, the practical education of the students must be foremost in the mind of the teacher. They should be taught, here, indeed, the medicine as it is known all over the world today. But newer things ought to be tested at the department for their reliableness and usefulness and ought to be made handy and practical, before they are handed over to the students. All students ought to be trained, in the first place, to become efficient practitioners. They will have to see many patients in one day and will have to act quickly and efficiently. New things appear daily; some are very complicated and some have only a temporary place in practical medicine. By loading the minds of the average student (and practitioner) indiscriminately with the "newest things" in medicine, we create there a haze which interferes with the promptness of the practical activity. Departments of medicine which will seriously and in an unpreoccupied manner test all new things before putting their stamp upon it, will act as very meritorious clearing houses for the practise of medicine.

When these scientific assistants have served from eight to ten years, they will be in most cases well qualified to investigate and teach modern medicine from a scientific as well as from a practical point of view. That is the new class of physicians, of which I spoke above, which should be created and from which the new heads of clinical departments should be chosen. If a number of high-grade medical schools would accept this part of the plan, in eight or ten years the country would be provided with a group of a higher type of clinicians. They will then work for the further development of this new type and our problem would find a permanent solution.

The third group should consist, as stated before, of professors, associate professors, etc., who should teach practical medicine at the bedside and for whom the teaching part may remain, as it is now, their secondary occupation, their primary occupation being private practise. They should be appointed for periods of five years and receive some remuneration. They should be selected from the consultants and practitioners of the town where they are recognized for their ability and efficiency. They should teach medi-

cine from the point of view of their rich, personal experience.

The fourth group, the volunteer assistants, should consist of younger men of ability of the practitioners' class. Officially they should work with and under the last-named group of teachers, but suitable men should be admitted for special purposes to the laboratories of the scientific staff. Under certain proper circumstances one or the other man of this group may be appointed to the staff of scientific assistants. The appointment of volunteer assistants should be for two years, and if after one reappointment they are not found deserving of advancement to the regular staff, they should not be reappointed.

As far as teaching is concerned, all parts should work as a unit, regulated chiefly by the head of the department.

The necessity for reappointment will serve, as stated above, as a valuable controlling factor; the power of appointment and reappointment should therefore be exercised with great care. I would suggest the following distribution of power. Heads of departments and full professors should be appointed, or reappointed, by the university; all other members of the staff should be appointed or advanced by the members of the medical faculty. In appointing and reappointing scientific assistants the head of the department should have at least three votes.

A head of a department who does not wish a reappointment, or is not reappointed, after ten years' service, shall have the right to be transferred to the practical department with the title professor—unless there are potent reasons against such a transfer. This, in conjunction with the privilege of having some private consultations at his own time during his occupancy of the headship, will compensate the head of a clinical department for the failure to obtain an appointment for life.

As to the relations of hospitals to the teaching department I can be briefer. There must be one hospital which is devoted exclusively to the teaching and study of clinical branches of medicine. While it may have laymen as trustees and a medical superintendent with the necessary clerical staff for the conduction of the business of the hospital, the actual management of its inside affairs should be exclusively in the hands of the medical faculty, and the inside affairs of each department should be exclusively or essentially in the hands of its head. This hospital should not have many private rooms for well-to-do patients, and, as stated above, they should not be used for private patients of the head of the department or any other member of the faculty. The income derived from the treatment of well-to-do patients in private rooms should go to the funds of the hospital.

There ought to be at least one other hospital at the disposal of the medical school which may have many private rooms. Here the practical staff of the school will teach at the bedside—in addition to their right to send patients to and teach at the school hospital—and here the consultants and practitioners belonging to the school may treat their private patients in the private rooms.

The students of medicine will have then a chance of learning predominantly modern scientific medicine at the one, and predominantly practical medicine with a mixture of art at the other, hospital. He will then be able to make his selection as to his future career, according to his natural inclinations and preceding impressions, whether it be scientific medicine with its elevating atmosphere, or active practise and all that goes with it.

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Research and Teaching in the University[1]

1. No verifiable evidence has been published which proves how research affects the quality of university and college instruction.

2. I believe that research work usually improves the teaching of the instructor, both in the subject in which the research is conducted

[1] Answers to twenty-one questions addressed to the writer by Messrs. William H. Allen and E. C. Branson, directors of a survey appointed to report on the work of the University of Wisconsin.